

are situated in a longitudinal depression, oblique and slightly curved; the first aperture is situated in a line with the pupil, and is one-fifth of an inch distant posteriorly.

Total length, $5\frac{1}{2}$ inches.

Color. In the alcoholic specimen, the head, back and sides are dark brown; the belly, clay color. Fins yellow.

Habitat. Ohio River.

A single specimen of this new species of *Ammocætes*, is in the cabinet of the Academy, marked as procured in the Ohio River, and presented by Dr. Hildreth. The peculiarities of the species are to be noticed in the remarkable length of the head, and distance from the orbit to the first branchial aperture, and also in the unusual size of the dorsal and caudal fins; from which last peculiarity the specific name is derived.

Descriptions of New Species of North American Serpents in the Museum of the Smithsonian Institution, Washington.

BY ROBERT KENNICOTT.

TANTILLA Baird & Girard.

T. NIGRICEPS Kennicott.

Specific character. Form more slender and head narrower than in *T. gracilis*. Vertical plate more elongate posteriorly, occipitals narrower. One anteorbital, two postorbitals. Seven upper labials. Color (in alcohol) uniform brownish white above, lighter beneath. Crown as far as behind the occipitals deep black; no indication of a post-occipital black ring as in *T. coronata*.

4491, Fort Bliss, New Mexico. Dr. Crawford.

2046, Indianola to Nueces, Texas. Capt. Pope.

DIADOPHIS Baird & Girard.

D. TEXENSIS Kennicott.

Spec. char. Dorsal scales in fifteen longitudinal rows. Color above uniform leaden or bluish black; beneath light yellow, irregularly spotted with black. Under jaws spotted. A yellowish occipital ring one and a half or two scales wide.

Descr. Form moderately slender. Head rather narrow, with the crown slightly arched; snout narrow and depressed. Vertical plate small, tapering posteriorly; superior labials seven. Eye proportionally large. Outer row of dorsal scales slightly the largest. Color above leaden or bluish black, the crown darker. As in *D. punctatus*, the edges of the upper labial shields are yellow, like the lower, but the latter are thickly spotted with black. The abdomen is usually irregularly spotted with black over its whole surface, though in some specimens there is a tendency to form a medial row as in *D. punctatus*. The under surface of the tail is tinged with reddish.

1897, East of Galveston, Texas. Prof. Andrews.

2076, Head of Trinity River, Texas. Capt. Pope.

2079, Llano Estacado. Capt. Pope.

2155, Monticello, Mississippi. Miss H. Tennison.

This will be distinguished from *D. punctatus* by its more slender form, arched crown and narrow snout, by the numerous and irregular spots on the abdomen, and especially those on the mandibular and mental plates.

LAMPROPELTIS Fitzinger.

L. MULTISTRIATA Kennicott.

Sp. char. Dorsal scales in twenty-three rows. Form similar to that of *L.*

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gentilis, but the head and eye larger. Color above brownish red, with thirty-one pairs of narrow black half-rings enclosing white spaces, from head to anus. The black rings not extending across the abdomen, which is uniform yellowish white. Head black above.

Descr. Snout broader and more depressed than in *L. gentilis*. It is also more elongate, and hence, also, the loreal and nasal plates; in the only specimen examined the second superior labial plate is replaced by two smaller ones, thus increasing the number to eight, a peculiarity probably abnormal, as all the other species of the genus have seven. The body above is brownish red in spirits, crossed by thirty-one pairs of black rings from head to anus. The enclosed white spaces are one and a half scales wide on the central fifteen dorsal rows, and begin to widen abruptly on the fourth lateral row on each side, extending over three or four scales longitudinally on the first row. On the sides they are punctulated with black as in *L. gentilis*. The occipital white ring is much broader. The black rings are each two scales wide on the vertebral region, narrowing to less than one scale laterally. On the fourth lateral row the two rings of each pair begin to diverge, the anterior uniting on the edge of the abdomen with the posterior ring of the pair in advance, the posterior becoming confluent with the anterior of the succeeding pair. Thus the ground color is enclosed in the form of a transverse elliptical spot. Upon the middle of the body these spots are two or three scales wide on the vertebral region, four or five on the sides, and but one on the first row of scales. Anteriorly the red intervals are greater; posteriorly they narrow slightly, but toward the tip of the tail they are entirely lost, as in *L. doliatus* and *gentilis*, by the confluence of the black rings. The black rings extend but a short distance upon the abdominal scuta, leaving the abdomen destitute of blotches, though it is faintly and sparsely punctulated. The chin and inferior labials are tinged with brown. The top of the head is black as in *L. gentilis*.

No. 1842, Fort Lookout, Nebraska. Lieut. Warren and Dr. Hayden.

The number of rows of scales and the more numerous rings will distinguish this species from *L. annulatus*, and those above compared with it.

L. ANNULATA Kennicott.

Spec. char. Form stout, head broad, eye small. Scales short and broad. Color bright red, with eighteen to twenty-two pairs of black rings from head to anus, each pair enclosing an immaculate yellow ring which completely encircles the body, widening but little upon the flanks. Abdomen between the yellow rings black. Top of head entirely black, this color extending posteriorly upon the occipitals in an acute angle. A broad occipital yellow ring.

Descr. General appearance similar to *L. gentilis*. The form is stouter, the head shorter, broader and more depressed, and the eye smaller. The dorsal scales are very different, being much broader; the lateral rows in *L. annulatus*, are higher than long, and those of the central are nearly as long as long. In *L. gentilis*, those of the lateral rows are considerably longer than high, and those of the central nearly twice as long as wide. There are twenty pairs of black rings from head to vent, which do not diverge on the sides; each ring covering two to two and a half scales longitudinally on the vertebral region and narrowing but little laterally. The enclosed yellow rings are one and a half scales wide on the vertebral region. The first three pairs of black rings behind the head are, with those enclosed, a little wider. The intervals of red ground-color occupy four or five scales on the middle of the body, and one or two more anteriorly and posteriorly. The yellow rings are of nearly uniform width, and completely surround the body. The spaces between them on the abdomen are black. There are no black spots upon the body.

Type No. 4293, Matamoras, Mexico. Lieut. Couch.

425, Mexico. Paris Museum.

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A small specimen from Brownsville, Texas, (No. 1855), with twenty-one pairs of black rings from head to anus, has the yellow rings rather wider on the abdomen, though not two scales wide on the first dorsal row,—and the black rings distinct; the enclosed abdominal intervals are only black along the middle. Otherwise similar to the above.

SCOTOPHIS Baird & Girard.

S. OBSOLETUS Kennicott. *Coluber obsoletus* Say, in Long's Exped. Rocky Mountains, i. p. 140, 1823; not *Coluber obsoletus* "Say," Holbrook, Am. Herp. iii. 1842, p. 61.

Spec. char. Head broad behind, tapering anteriorly, snout more pointed than in *S. Allegheniensis*. Head much more elevated anteriorly. Nasals, loreal, anteorbital, and anterior upper labials elevated. Vertical large anteriorly, nearly as broad as long. Snoperciliaries and occipitals large. Scales in twenty-five or seven rows, the central ones moderately carinated. Color above entirely black, with a slight bluish olive tinge. Upon stretching the skin, the spaces between the scales seem to be red. Abdomen light bluish slate posteriorly; anteriorly, yellowish, clouded with bluish slate, lighter than in *S. Allegheniensis*.

Descr. This species resembles *S. Allegheniensis* very closely, rendering a comparative description necessary. Head broad behind, more elongate and elevated in front than in *S. Allegheniensis*, hence the occipitals are larger, and the nasals, loreal, preocular, and anterior upper labials are more elevated. The anterior frontals are smaller, though the external posterior angles are more elongated; the anteorbital is narrower. Posterior orbitals rather larger; vertical large, anterior breadth nearly equal to the length. Four or five external rows of scales smooth, the first largest, with the scales less obtuse than in *S. Allegheniensis*. The head and entire upper parts are uniform black, not pitchy as in *S. Allegheniensis*, but with a slight tinge of olivaceous or brown. Upon stretching the skin the spaces between the scales and sometimes the covered bases of the latter are seen to be of a bright reddish brown on the sides, and in bars across the back, enclosing a vertebral series of pure black spaces which are analogous to the dorsal spots sometimes seen in *S. Allegheniensis*. No trace of these markings is to be seen in our specimens of the present species without stretching the skin, though one of them is but about three feet in length.

The abdomen is much lighter than in *S. Allegheniensis*; the posterior space occupied by the light bluish slate color is less. Along the middle third it is yellowish, heavily clouded with bluish slate, and anteriorly it is yellow, with irregular clouded spots of bluish slate along the sides. These anterior markings are much smaller than in *Allegheniensis*, and never in large square blotches as in that species.

Though so closely allied to *Allegheniensis* as not to be readily distinguished by absolute characters, except in the red spaces between the scales, the differences in the form of the head, and generally lighter colors, will be apparent at once upon comparison.

Independence, Mo. Dr. J. G. Cooper.

EUTÆNIA Baird & Girard.

E. MEGALOPS Kennicott.

Spec. char. Form shorter and stouter, with proportionally shorter tail than in *E. proxima*, which this species resembles. Tail one-fourth of the total length. Eye very large, greater than in *E. proxima*. First dorsal row of scales broader, each scale as high as long, and less strongly carinate. Dorsal stripe narrow, covering one and less than two half rows of scales. Color uniform brownish ash, with the three longitudinal stripes whitish yellow. Head olive ash.

Descr. Color uniform dull brownish ash or clay color, with the dorsal and

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lateral stripes whitish yellow. A few of the scales have narrow black spots on their edges, but these are not prominent, and never extend over a scale, appearing as indistinct mottlings of black on the ground color, always on the rows next the stripes. The head above is light olive ash. The lateral stripe is on the third and fourth rows, and is narrower than in *E. proxima*, covering rather less than two half scales. The color below the lateral stripe is a little lighter than that of the back. The exterior dorsal row is much wider than in any of the allied species, each scale being as high as long. The second row is much narrower, though a little wider than the third. The eye is strikingly large, and the superciliaries are raised, rendering the fore part of the crown an inclined plane, yet the muzzle is higher than in *E. proxima*.

No. 965, Tucson and St. Magdalena, 160, 86, 21, 24, 6. Major Emory. A. Schott.

E. MACROSTEMMA Kennicott.

Spec. char. Twenty-one rows of scales. Body rather stout. Head small, narrow posteriorly. Vertical plate much elongated, twice as long as wide. Eight upper labials, sixth largest, seventh sometimes equal. All the dorsal scales broad and short, first row largest, its scales as high as long and slightly carinate; second smaller, but much broader than the third. Ground color above very dull yellowish brown. Dorsal stripe broad, light brownish, but little lighter than the ground color, and with an indistinct black border. Lateral stripe on the fourth and part of the third row, indistinct, dull yellowish green. Two series of indistinct broken spots along the second and sixth rows.

Descr. The dorsal stripe is broad and regular, covering nearly three rows, but is dull and indistinct. On each side of it for one and a half scales there is a rather indistinct black border, somewhat as in *E. ordinoides*. Below this to the fourth row the color is dull greenish brown. On the fifth and sixth rows there is a series of indistinct black spots, each covering three scales, whose keels are of the ground color. This is also the case with the scales in the black border of the dorsal stripe. The lateral spots are one and a half scales wide, and separated by spaces of the same width. The third and fourth rows, particularly the fourth, are lighter, and of a yellowish green or olive color; the first and second and lower edge of third being a little darker, sufficiently define the lateral stripe. On about every other scale of the second row is a series of broken and irregular black spots, formed by the black margin of each side of the scales; extremely slight as to the contiguous scales. Each abdominal scutum is distinctly edged with black anteriorly, (of course concealed by the incumbent scutum), and some are tipped with black at their extremities, otherwise the abdomen is immaculate. In one specimen it is uniform dark green; in another, uniform yellowish green. The head is dark brown above, the superior labials but little lighter, and narrowly bordered with black posteriorly.

One specimen, upon the removal of the epidermis, appears entirely of a pale creamy yellow throughout, but with the black markings, including the border of the dorsal stripe, very distinct. Another specimen is green instead of whitish yellow.

City of Mexico. Maj. W. Rich.

This is a very well marked species, and readily distinguished. In color it bears some resemblance to some varieties of *E. ordinoides* and *dorsalis*, but it belongs to a different section of the genus, as indicated by the position of the lateral stripe. It is otherwise different from *E. ordinoides*, in having a very much smaller head and larger vertical plate, the dorsal scales wider, and the stripe more indistinct. From *E. Marciana* it differs in its very much smaller head and longer vertical plate, in its broader dorsal band, bordered by a stripe instead of a row of spots, and in the absence of the post oral crescentic patch, and broad black borders of upper labials.

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E. HAMMONDII Kennicott.

Spec. char. Twenty-one rows of scales. Form rather slender; head long, narrow posteriorly; snout elongate and narrow, but rather obtuse. Postorbitals three, the upper much the largest. Eight upper labials, sixth largest; its postero-inferior angle much elongated. No dorsal stripe; lateral stripe olive yellow on the second and third rows. Back uniform dark olive brown or blackish, without distinct spots. Abdomen whitish olive, lighter anteriorly, and a dark line along the middle posteriorly.

Descr. Form rather slender, the tail about one-fourth the total length. Head very narrow and much elongated; the snout very narrow, but rather obtuse. The back above the third row of scales is very dark uniform olive brown without spot or band, except a light medial line extending about an inch back of the head. Lateral stripe light olivaceous yellow; first row of scales a little darker, and similar to the abdomen, being of a very dull whitish olive. Bases of the scales of the first row black; bases of abdominal scutes the same, the color broader toward their extremities, and generally concealed by the incumbent scute. A narrow slate-colored line along the middle of the abdomen posteriorly. Head above dark olive; superior labials very light olive yellow, margined with black posteriorly, excepting the eighth. This is black anteriorly, its posterior end being occupied by a yellowish patch which is confluent with the yellow of the neck. Lower postorbitals yellow. Two small yellow occipital dots, and a small yellow dot on each side of the posterior part of the vertical plate; these sometimes absent.

Young specimens, and older ones, after the removal of the epidermis, exhibit faint indications of a very narrow dorsal stripe upon a single row of scales, but in one there is no trace of this, even upon the neck, where it is usually visible. These specimens also exhibit traces of two series of large alternating spots, which present somewhat the appearance of a zigzag line. In a young specimen there is a distinct series of spots on the first dorsal row, each spot covering one scale, and separated from those adjacent by two scales. Only one specimen is without the dark line upon the abdomen posteriorly. There are no irregular black blotches upon the abdomen as in *E. angustirostris*.

San Diego. Dr. J. F. Hammond.

Fort Tejon. J. Xantus.

This species is strongly marked, and will hardly be confounded with any at present known. It resembles most nearly *E. angustirostris*, under the head of which species the comparative differences are given in full. Two young specimens labelled by Dr. Hallowell "*Tropidonotus ordinatus*," belong here. *Eutania ordinata* has a stouter body and head, and more pointed snout. There are nineteen dorsal rows, and a very different system of coloration.

E. ANGUSTIROSTRIS Kennicott.

Spec. char. Body moderately stout; tail less than one-fourth the total length, and very small. Head exceedingly elongated and narrow, more so than any other of the genus; snout very long, narrow and pointed. Crown plane above; eye large. Upper labials eight, sixth largest, seventh scarcely smaller. Dorsal rows twenty-one; outer row large, very faintly carinated, the second smaller but broader than the third; the next rather large and elongated, and strongly carinated. Dorsal stripe narrow, very indistinct. An indistinct, dull whitish lateral stripe on the second and third rows. Above the lateral stripes dark olive brown or black. Abdomen dark ashy olive or black.

Descr. The back above the third row of scales is dark olive brown without spots, but with each scale bordered with darker. The scales of the second and third rows are greyish olive, with distinct yellow borders. The first row and abdomen are ashy olive, with irregular heavy black blotches upon the

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latter, more numerous along the middle third, but offering no indication of a narrow black line as in *E. Hammondii*. On the first three rows some scattered scales have black spots on their bases and edges. Head above dark olive; upper labials light olive with vertical black edgings.

A young specimen is entirely black; the dorsal stripe obsolete, being indicated only by a faint line on a single row of scales; the lateral stripes very indistinct; the first and part of the second row of scales entirely black. A whitish line along each side of the abdomen formed by a white spot at the end of each scute. These are also margined posteriorly with the same color. Throat whitish.

The remarkable elongation of the snout will distinguish this species from any others at present known, excepting *E. leptcephala* and *Hammondii*, from which it differs in other respects. The snout is more elongated, and decidedly more pointed than in either; the head is not at all depressed anteriorly as in *E. leptcephala*, and the eye is strikingly larger. The colors of the back and abdomen are darker, and the rows of scales are twenty-one, not nineteen. As compared with *E. Hammondii*, which it most nearly resembles, beside the difference in the form of the snout, the head is depressed posteriorly (not anteriorly); hence the crown is quite plane throughout, while in *E. Hammondii* the crown is somewhat arched,—this form being more observable upon the occipital and frontal (vertical) region. In *angustirostris* the general form is stouter, while the head is longer, and hence a greater elongation of the vertical and frontal plates. The scales of the upper rows are also larger and more elongated, and more strongly carinate. The tail is shorter, being considerably less than one-fourth the total length, while in *Hammondii* it is fully or more than one-fourth. This member is also very slender, the body tapering abruptly near the anus in the former species. The dorsal stripe, though narrow, is not wanting, and the abdomen is much darker, being ashy olive with heavy black blotches throughout instead of light yellow or greyish olive, and there is no indication of the central line. The young black specimen is strikingly different from the young of *E. Hammondii*.

Parras, Coahuila, Mexico. Lient. Couch.

E. CYRTOPSIS Kennicott.

Spec. char. Form very slender, but little stouter than that of *E. saurita*, but with shorter tail, one-fourth the total length. Head large. Eye very large. Superior labials eight, sixth and seventh largest. Three postorbitals, upper much the largest. Scales in nineteen rows. Color above olive brown, with two alternating series of elongated spots between the stripes, giving the appearance of a zigzag line. Dorsal stripe whitish, narrow, distinct to the tip of the tail. Lateral stripe on the second and third rows, of the same color, broad, distinct from head to anus. A series of black spots on the first dorsal row; abdomen uniform greenish white. Orbitals whitish; occipital spots obsolete.

Descr. This species somewhat resembles *E. Marciana* in the pattern of coloration, which, however, has the lateral stripe upon the third row only, instead of the third and second. The difference in form is most striking, the body being almost as slender as in *E. saurita*. The scales are rather larger than in *E. Marciana*, and those of the first row more elongated. The ground color above the lateral stripe is olive brown; the first dorsal row is whitish olive or greenish white. The abdomen is uniform greenish white, except a small black marginal spot near the extremity of each abdominal sente. The whitish dorsal row occupies one, and less than two half rows of scales, and is encroached upon by the black dorsal blotches which sometimes reach the central row. The lateral stripe is also encroached upon by the spots above and below it, though never entirely interrupted by them near the head as in *E. Marciana*. The head is dark olive above; labials margined vertically

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with black, somewhat as in *E. Marciana*, except the seventh plate, which in the former is heavily bordered with black on both edges; in the latter, slightly upon the anterior edge alone. There is a vertical light patch at the angle of the mouth crossing the posterior upper labial, and confluent with the white of the neck, and not distinct and crescent-shaped as in *Marciana*. Behind the occipital plates is a very large double black blotch. Behind this there are three or four perfect square blotches extending quite from the dorsal to the lateral stripe, each three scales in length, and separated by intervals of about two scales wide. Behind these the general pattern of spots is seen; it consists of two series of large oblong rhomboidal alternating spots, each about four scales long, and somewhat confluent with each other at the adjacent corners, giving the appearance of a zigzag line upon each side. On the first and second dorsal rows is a third series of very distinct black spots, each on parts of three scales, and the extremities of two abdominal scutes. The intervening spaces of greenish white ground color are equal in width to the spots.

No. 930, Rinconada Coahuila, Mexico, 179; 90, 19, 24½, 6. Lient. Couch.

Durango, Lient. Couch.

Gila River. Dr. Webb.

Other specimens have the dorsal stripe on a single row of scales, and the lateral stripe has its upper border regular and distinct, without interruption from the middle series of spots, the lower edges of which reach only the upper edge of the third row instead of the lower edge as in the specimen above described. Instead of the distinct spots upon the first and second rows in that specimen, they are here broken up into black borders of three approximated scales. In the only large specimen of this variety, the keels of the first dorsal row are not parallel to those of the rows above, being directed obliquely downward and backward, so that the posterior end of one keel falls below the anterior end of the next succeeding, instead of forming a continuous line. The nose of this specimen is also more pointed than in the typical one.

REGINA Baird & Girard.

R. VALIDA Kennicott.

Spec. char. Body stout for the genus; head large, short but high; broad posteriorly. Snout elongated, narrow and pointed. Rostral as high as broad, subpentagonal, the apex pointed. Vertical very narrow, obtusely pointed posteriorly; occipitals small. Nineteen rows of scales, all carinated; the exterior very feebly. Light brownish ash above, with faint black markings upon the bases of the scales of the first, fourth and eighth rows of scales. Abdomen entirely uniform yellowish.

Descr. The body is stout for the genus, with the tail rather short. The head is very large and proportionally stout. It is very broad and high posteriorly, and tapers regularly to the snout, which is rather narrow, elongated, and pointed. Crown flattened as in other species of the genus. Snout elevated, rostral plate as high as wide, subpentagonal, and with the elongated apex pointed. Loral nearly as high as long. Anterior frontals triangular, elongated. Vertical very narrow, not widening anteriorly, the posterior point very obtuse and scarcely triangular. Superciliaries proportionally wide, and occipitals small. There is one rather large anteorbital, and two large postorbitals on one side, and three on the other, (which may possibly be the normal number). Upper labials large, sixth and seventh largest, eighth (the last) smaller. Inferior labials ten, sixth longest.

The dorsal rows are nineteen, all carinated, the outer row very slightly. The scales of the first row are much the largest; all the rest about equal.

The color above is entirely uniform light brownish ash, (clay color beneath the epidermis), with about every alternate scale on the fourth and fifth rows

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marked with black on each side near its base. Posteriorly the scales of the first row are faintly marked with black at their bases. These black markings are not prominent, and only perceptible upon close examination. The head, including the upper labials and rostral, has more of an olivaceous cast. The abdomen is entirely uniform pale greyish yellow, the tips of the scutella being, however, tinged with the ashy brown color of the back.

1309, Durango, Mexico. Lieut. Couch.

In its general aspect this species bears considerable resemblance to *Nerodia erythrogaster*, from which, however, it is, upon critical examination, at once distinguished by the number of dorsal rows and other generic characters. It will, perhaps, be found that the faint black markings on the first, fourth and eighth rows are the remaining indications of faded stripes.

NERODIA Baird & Girard.

N. Couchii Kennicott.

Spec. char. Resembles *N. erythrogaster*, but the head is shorter and very broad; the muzzle broad and obtuse. Postorbitals three, much larger than in *N. erythrogaster*, the lower extending forward beyond the middle of the eye. Eight upper labials, all large, the seventh much larger than in *N. erythrogaster*; the dorsal scales are broader and less strongly keeled, and in twenty-three rows. Uniform dull light slaty brown above, paler than *erythrogaster*.

Descr. The head is short, but very broad and deep posteriorly; the nose is broad and obtuse. The outline presented by the head is subovoid, not regularly tapering from the angle of the jaws to the snout as in *N. erythrogaster*. The prefrontals are rather shorter than in that species. The postorbitals are very large, three in number, the lower one elongated forward to beyond the middle of the orbit. The color above is entirely uniform dull light slaty brown, lighter than in the lightest varieties of the *erythrogaster*. The abdomen in both specimens examined is uniform brownish white. Upon stretching the skin of one specimen, traces of the usual white transverse lines are seen between the scales. The young are probably marked somewhat as in *N. erythrogaster*.

No. 1319, San Diego, New Leon. $143+1$, 71, 23, $37\frac{3}{4}$, $9\frac{3}{4}$. Lieut. Couch.

No. 1314, Santa Caterina, New Leon. $143+1$, 86, 23, $26\frac{1}{2}$, $9\frac{1}{4}$. Lieut. Couch.

This species very closely resembles *N. erythrogaster*, but can be distinguished upon comparison by the lighter color, broader and shorter head, and by the larger postorbitals and anterior position of the lowest. From *N. Woodhousei* it differs in its uniform color, its much broader and shorter head, etc.

N. COMPRESSICAUDA Kennicott.

Spec. char. Body stout. Form triangular, much compressed toward the tail, where it is considerably higher than broad. Head elongated, rather narrow, but very deep. Plates of the crown large; vertical short, very broad; loreal small; three postorbitals, upper and lower small, but the central with its lower posterior angle prolonged to the labials. Twenty-one dorsal rows of scales, all carinate, in form rather wide; those of the first rows proportionally small. Ground color yellowish olive; four black stripes on the neck; behind this zigzag transverse black bands, which do not taper on the sides. Posteriorly these bands break into three series of spots symmetrically arranged, not alternating.

Descr. Body rather stouter than that of *N. Sipedon*, and presenting a subtriangular form. This is most evident posteriorly, where, and on the tail, the height is much greater than the transverse diameter. The tail is very large at the base as in *N. rhombifer*, and does not taper from the anus, 1860.]

but narrows abruptly at one-third its length from the base. Dorsal rows twenty-one, all distinctly carinate. The scales are rather broad, and much rounded posteriorly, those of the first dorsal row disproportionately small. The head is elongate and rather narrow posteriorly, but very deep and but little depressed on the snout. All the plates of the crown are large; the vertical very broad and short, the loreal longer than high, the upper and lower postorbitals small, but the central elongated so as to reach the labial plates.

In pattern of coloration and structure, this species departs somewhat from the usual style of the genus. The ground color is light olive brown, crossed on the anterior half of the body by waving or somewhat zigzag transverse black bands, covering two or three scales longitudinally, and separated by intervals of one or two scales. These bands do not taper regularly on the sides as in *N. sipedon*, but are constricted upon about the sixth row on each side, but are as wide upon the third, as on the vertebral row. Posteriorly these bands become narrower, and finally break up into a dorsal series of vertically elongated spots, and a lateral series of small circular ones, which do not alternate with the dorsal series as in *N. sipedon*, *taxispilatus* and others. For two inches behind the head, the transverse bands are replaced by four distinct longitudinal black lines, the lateral ones each covering the third, fourth, and part of the second rows, the upper ones covering the seventh, eighth, ninth and part of the tenth rows; these black lines are separated by a little over one scale of ground color. None of the black markings involve the first dorsal row, which is yellowish olive, excepting some irregular dark mottlings. The head is yellowish olive, with the middle of the occipitals and verticals black, and a black patch extending from the eye back above the labials. The rostral is yellow, distinctly margined above with black. All the labials above and below, and the inframaxillary plates are yellow, prominently margined with black. The abdomen is yellow, with two lines of black blotches.

1348, Tampa Bay, Florida. Mr. D. Welch.

HETERODON Pal. de Beauvois.

H. KENNERLYI Kennicott.

Spec. char. Head broad, very short anteriorly. Rostral plate very large. Loreal plate very small, sometimes absent. Only two supplemental plates behind the azygos; the latter is sometimes replaced by two symmetrical contiguous plates, and without any supplemental. The prenasal and prefrontal in contact with the posterior process of the rostral. Dorsal row of scales twenty-three, all carinated except the first and second, which are perfectly smooth. Ground color light yellowish grey; a dorsal series of rather indistinct rounded or subquadrate brown blotches; a second series of smaller circular spots, much darker and more distinct; below this a third, and more indistinct series.

Descr. In its general form and appearance this resembles the *H. nasicus*, with which it is sometimes found associated. The body, however, is rather shorter and thicker than in *H. nasicus*, and the head is broader with the part of the head anterior to the eye decidedly shorter. The nasals are not as well developed longitudinally as in *H. nasicus*, but the result of this shortness of the anterior part of the head is seen in the very small loreal which is frequently wanting entirely. There is never more than one loreal while frequently two are seen in *H. nasicus*, in which the loreal is in every case strikingly larger than in *Kennerlyi*. The most striking difference between these species is in the number of small plates surrounding the azygos, or postrostral. While in *H. nasicus* there are always at least ten of these, one or two of which margin the inner edges of the prenasals and prefrontals, there are never more than two, and frequently but one additional plate in *H. Kennerlyi*, and the prenasal and prefrontal are always in contact with the posterior process of the rostral. The azygos is short, nearly as broad as

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long, and usually there are just behind it two contiguous plates of about the same size separating it from the postfrontal, but not from the prefrontal. Frequently, however, the azygos is longitudinally divided and without any additional plates, but in contact with the rostral anteriorly, and the vertical posteriorly, and not separated from the postfrontals. The vertical, occipitals, superciliaries and labials are much as in *H. nasicus*, though generally less developed longitudinally. The rostral is as large as in *H. nasicus*. The two outer dorsal rows are both perfectly smooth; in *H. nasicus*, the second is distinctly though delicately carinate.

The ground color is light yellowish gray, with a dorsal series of rather indistinct subquadrate or rounded blotches, two to two and a half scales long, and separated by intervals of one or two scales, rather wider anteriorly. Below this is a series of very distinct purplish black circular blotches, covering four scales transversely and two longitudinally; below this, one or more indistinct series of spots. This pattern of coloration is very similar to that of *H. nasicus*, but the ground color is always lighter, and the dorsal spots are lighter and less distinct. The upper lateral series is of a purplish black, and much more distinct, forming a prominent character.

Abdomen nearly entirely black, except a few yellow scuta. The head is marked as in *H. nasicus*, except that the nasals, prefrontals and rostral are all yellowish, while in the latter species they are dark in front of the light transverse line which crosses the crown behind the rostral; and in *H. Kennerlyi* the light line across the superciliaries and vertical is much broader than in *H. nasicus*. This species differs from *H. simus* in many of the same features as does *H. nasicus*. These, together with the small or absent loreal, and small number of supplemental plates, will readily distinguish it.

Rio Grande. Dr. Kennerly.
Sonora.

ELAPS Schneider.

ELAPS EURYXANTHUS Kennicott.

Spec. char. Head very small, narrower than the neck; entirely black as far back as the angles of the mouth. Body banded alternately with black and light brick red, separated by narrow rings of creamy white, all the brands immaculate. First broad ring behind the occiput red instead of black as in the other species.

Descr. Body rather stout, but less so than in *E. fulvius*. Dorsal scale large. Plates of the head small except the rostral, which is very large and extends upward between the prefrontals. Prefrontals elongated laterally, more so than in *E. tener*. Post frontals small, elongated laterally; vertical very small and narrow, subhexagonal, pointed anteriorly, elongated and tapering posteriorly; it enters but slightly between the occipitals. Occipitals small, subtriangular, the anterior edge square, very slightly notched for the vertical. Seven labials above; posterior very small.

The fore part of the head is black, but the black instead of passing forward from the anterior part of the occipitals to near the eye, and thus leaving the three posterior labials yellow as in *E. fulvius* and *E. tener*, involves nearly the whole of the occipitals, and passes backward entirely behind the angle of the mouth and involves the whole of the lower jaw to behind the posterior labial, leaving a broad emargination in the black on the occiput in the bottom of which emargination are seen the white posterior tips of the occipitals. Behind this is a creamy white ring, (probably yellow in life) which is situated more posteriorly than in *E. fulvius*, and involves only the posterior tips of the occipitals and none of the labials. Next behind this white ring, instead of a black ring, as in the other species, is a broad light brick red one involving eleven scales. A creamy white ring three and a half scales wide separates the red from the black. (See Plate I, fig. 1.)

rates this first red ring from a black one eight scales in width. Behind this are alternate immaculate black and red rings, seven or eight scales wide, and separated by white rings three to three and a half scales in width. There are eleven black and eleven red rings on the body separated by twice as many white ones. The tail is ringed with black and white without any red. All the rings run entirely around the body of the same color, and are wholly without spots, above and below. The plates of the head and peculiar style of coloration in this strongly marked species cannot be mistaken. The three colors, each immaculate, glossy, and clear, form a striking contrast, and the red is probably bright carmine in life, thus affording the most beautiful coloration possessed by any North American snake.

ELAPS DISTANS Kennicott.

Spec. char. Body slender, with very narrow black rings, four or five scales in width, separated by intervals, three or four times as wide, of brownish or reddish, entirely unspotted. No light rings separating the red and black ones. Under lip and jaw wholly without black, and the tip of nose light.

Descr. Body very slender; tail long for the genus. Dorsal scales small. Plates of the head generally larger than in *E. euryxanthus*; rostral broad and not as high as in *E. euryxanthus*. Anterior frontals rather small, and slightly elongated laterally; postfrontals large, pentagonal, as broad as long. Superciliaries quadrangular, elongated, narrow. Vertical, pentagonal, rather large, but narrow, the pointed posterior extremity inserted between the occipitals, as in *E. fulvius*.

The ground color of the body in the alcoholic specimen is reddish brown, probably brighter red in life, with twelve very narrow black rings from head to anus. At the edges of the black rings the reddish color becomes indistinctly lighter for half a scale, but there is no well defined light ring bordering the black as in the other species. On the tail are five broad black bands separated by narrow light rings. The anterior part of the head back to the middle of the occipitals and the upper jaw to the fourth labial is black, but this color does not extend on the lower jaw at all, and the lower edge of the rostral and upper labials is light. On the posterior part of the head is the usual light ring, but situated farther back than in *E. fulvius*, its anterior border passing across the middle of the occipitals a little behind the vertical and thence down and forward to the fourth labial, expanding below upon the whole of the lower jaw. On the neck behind this light ring is a black one, about five or six scales in width, which does not run entirely around the body, being interrupted for a short distance on the abdomen. Behind this, the black annulations are perfect, each four or five scales in width, and separated by intervals of fifteen to twenty scales of the ground color. The black annulations are broader on the vertebral region than laterally and beneath where they cover three or four dorsal scales, and the same number of abdominal scutellæ. The black rings on the tail are about eight scales wide, and separated by light intervals of only two or three scales.

The narrow black rings, separated by very wide intervals, will at once distinguish this species from any of the others here described. There are also no blotches or dots of black on the red intervals, and, if the colors of the specimen described have not been much altered by soaking, the absence of distinct light rings of a third color between the black and red ones will form a striking character. The color of the light occipital ring and of the light rings on the tail is probably yellow or white in life. The mutilated condition of the head prevents an accurate description of its outline, but it is apparently small and narrow as in *E. tener*.

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